

CLAIMS

What is claimed is:

1. A system of cordless power tools comprising:

a rechargeable battery pack having a housing, a terminal block and a keying feature, the housing being formed with a pair of guide rails and a pair of guide grooves, the guide rails being laterally spaced-apart from one another and extending in a direction generally parallel to a longitudinal axis of the rechargeable battery pack, the guide grooves extending generally parallel to the guide rails and being vertically spaced apart therefrom, the terminal block including a positive blade terminal and a negative blade terminal, the keying feature being coupled to one of the housing and the terminal block and extending generally parallel to the longitudinal axis of the battery pack; and

a power tool having a tool housing, a positive tool terminal and a negative tool terminal and a mating keying feature, the tool housing defining a pair of rails and a pair of grooves;

wherein the guide rails, the guide grooves and the keying feature cooperating with the grooves, the rails and the mating keying feature, respectively, to align the positive and negative blade terminals with the positive and negative tool terminals, respectively, when the battery pack is slidably engaged to the power tool along an insertion axis that is generally parallel to the longitudinal axis of the battery pack.

2. The system of cordless power tools of Claim 1, wherein one of the keying feature and mating keying feature is a projection that is configured to be slidably received into the other one of the keying feature and mating keying feature.

3. The system of cordless power tools of Claim 2, wherein the projection is disposed between the positive and negative blade terminals.

4. The system of cordless power tools of Claim 2, wherein each of the positive and negative tool terminals is disposed in an insulating frame and the mating keying feature is a slot formed between the frames.

5. The system of cordless power tools of Claim 1, wherein one of the battery pack and the tool housing further comprises a latch, the latch being configured to engage a recess formed in the other one of the battery pack and the tool housing to inhibit withdrawal of the battery pack from the power tool.

6. The system of cordless power tools of Claim 5, wherein the latch includes a latch member that is biased toward the other one of the battery pack and the tool housing.

7. The system of cordless power tools of Claim 6, wherein the latch member is vertically movable.

8. The system of cordless power tools of Claim 6, wherein actuation of the latch retracts the latch member toward the one of the battery pack and the tool housing.

9. The system of cordless power tools of Claim 5, wherein a longitudinal axis of the recess extends generally transverse to the insertion axis.

10. The system of cordless power tools of Claim 1, wherein the terminal block includes a second positive blade terminal and a second negative blade terminal, the second positive and negative blade terminals being arranged generally parallel to the positive and negative blade terminals.

11. The system of cordless power tools of Claim 10, wherein the negative blade terminal and the second negative blade terminal are laterally spaced apart from one another.

12. The system of cordless power tools of Claim 10, wherein the positive blade terminal and the second positive blade terminal are laterally spaced apart from one another.

13. A system of cordless power tools comprising:

a rechargeable battery pack having a housing and a terminal block, the housing being formed with a pair of guide rails and a pair of guide grooves, the guide rails being laterally spaced-apart from one another and extending in a direction generally parallel to a longitudinal axis of the rechargeable battery pack, the guide grooves extending generally parallel to the guide rails and being vertically spaced apart therefrom, the terminal block including a first set of blade terminals and a second set of blade terminals, the first set of blade terminals including a first positive blade terminal and a first negative blade terminal, the second set of blade terminals including a second positive blade terminal and a second negative blade terminal; and

a power tool having a tool housing and a set of tool terminals, the tool housing defining a pair of rails and a pair of grooves, the set of tool terminals including a positive tool terminal and a negative tool terminal;

wherein the guide rails and the guide grooves cooperate with the grooves and the rails, respectively, to align the first set of blade terminals or the second set of blade terminals with the set of tool terminals.

14. The system of cordless power tools of Claim 13, wherein the first negative blade terminal and the second negative blade terminal are laterally spaced apart from one another.

15. The system of cordless power tools of Claim 14, wherein the first and second negative blade terminals are oriented generally parallel to the longitudinal axis of the battery pack.

16. The system of cordless power tools of Claim 13, wherein the first positive blade terminal and the second positive blade terminal are laterally spaced apart from one another.

17. The system of cordless power tools of Claim 16, wherein the first and second positive blade terminals are oriented generally parallel to the longitudinal axis of the battery pack.

18. The system of cordless power tools of Claim 13, wherein one of the battery pack and the tool housing further comprises a latch, the latch being configured to engage a recess formed in the other one of the battery pack and the tool housing to inhibit withdrawal of the battery pack from the power tool.

19. The system of cordless power tools of Claim 18, wherein the latch includes a latch member that is biased toward the other one of the battery pack and the tool housing.

20. The system of cordless power tools of Claim 19, wherein the latch member is vertically movable.

21. The system of cordless power tools of Claim 19, wherein actuation of the latch retracts the latch member toward the one of the battery pack and the tool housing.

22. The system of cordless power tools of Claim 18, wherein a longitudinal axis of the recess extends generally transverse to the insertion axis.